CLAIMS

1. Process for isomerisation of paraffin hydrocarbons catalysed by an ionic liquid catalyst in the presence of one or more cyclic hydrocarbon additives in a reaction medium, which cyclic hydrocarbon additives contain and/or are transformed in the reaction medium to a compound containing a structural unit with a tertiary carbon atom.

2. A process according to claim 1, wherein the cyclic hydrocarbon additive is chosen among compounds containing from 6 to 8 carbon atoms.

3. A process according to claim 1, wherein the cyclic hydrocarbon additive is chosen from methylcyclohexane, dimethylcyclopentane or mixtures thereof.

4. A process according to claim 1, wherein the ionic liquid catalyst comprises an N-containing heterocyclic and/or aliphatic organic cation and an inorganic anion derived from metal halides or mixed metal halides.

5. A process of claim 1, wherein a cation of the ionic liquid catalyst is an N-aliphatic moiety with one or more alkyl or aryl groups.

6. A process of claim 5, wherein the N-aliphatic moiety is an ammonium compound and/or an alkyl substituted pyridinium, piperidinium or quinolinium compound.

7. A process of claim 1, wherein the anion of the ionic liquid is derived from a metal halide with strong Lewis acidic properties.

8. A process of claim 1, wherein the ionic liquid catalyst is obtained by combining N-containing heterocyclic and/or N-containing aliphatic organic compounds with one or more metal halides in a molar ratio of between 1:3 and 1:0.5.

9. A process of claim 4, wherein the metal halide is selected from $AlCl_4^-$, $AlBr_4^-$, $GaCl_4^-$, $Al_xCl_{3x+1}^-$, $1<x<2$ and $Al_xCl_{3x}Br^-$, $1<x<2$.

10. A process of claim 1, wherein the isomerisation is performed at a pressure from 1 to 60 bar and a temperature from -30 to 150°C and a hydrocarbon feed: catalyst volume ratio is from 20:1 to 1:20.